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Committee on the Peaceful Uses of Outer Space
Legal Subcommittee
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Draft report

V. Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union

1. Pursuant to General Assembly resolution 72/77, the Subcommittee considered, as a regular item on its agenda, agenda item 7, entitled:

"Matters relating to:

"(a) The definition and delimitation of outer space;

"(b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union."

2. The representatives of Canada, Ecuador, Indonesia, Mexico, Pakistan, the Russian Federation, South Africa and the United States made statements under agenda item 7. Statements were also made by the representative of Ecuador on behalf of the Group of 77 and China and the representative of the Plurinational State of Bolivia on behalf of the Group of Latin American and Caribbean States. During the general exchange of views, statements relating to the item were made by representatives of other member States.

3. At its 957th meeting, on 9 April 2018, the Legal Subcommittee reconvened its Working Group on the Definition and Delimitation of Outer Space, with José Monserrat Filho (Brazil) as Chair. Pursuant to the agreement reached by the Subcommittee at its thirty-ninth session and endorsed by the Committee at its forty-third session, both held in 2000, and pursuant to General Assembly resolution 72/77, the Working Group was convened to consider only matters relating to the definition and delimitation of outer space.

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4. The Working Group held [...] meetings. The Subcommittee, at its [...] meeting, on [...] April, endorsed the report of the Chair of the Working Group, contained in annex [...] to the present report.

5. For its consideration of the item, the Subcommittee had before it the following:

(a) Note by the Secretariat on national legislation and practice relating to the definition and delimitation of outer space (A/AC.105/865/Add.20 and A/AC.105/865/Add.21);

(b) Note by the Secretariat on questions on suborbital flights for scientific missions and/or for human transportation (A/AC.105/1039/Add.10 and A/AC.105/1039/Add.11);

(c) Note by the Secretariat entitled "Definition and delimitation of outer space: views of States members and permanent observers of the Committee" (A/AC.105/1112/Add.4 and A/AC.105/1112/Add.5);

(d) Working paper prepared by the Chair of the Working Group on the Definition and Delimitation of Outer Space of the Legal Subcommittee entitled "Promoting the discussion of the matters relating to the definition and delimitation of outer space with a view to elaborating a common position of States members of the Committee on the Peaceful Uses of Outer Space" (A/AC.105/C.2/L.302);

(e) Working paper submitted by the Russian Federation entitled "The challenging context of considering all aspects of the delimitation of airspace and outer space: arguments for adding dialectical elements to, and setting new analytical trends in, discussion of the issue" (A/AC.105/C.2/L.306);

(f) Conference room paper submitted by the Space Safety Law and Regulation Committee of the International Association for the Advancement of Space Safety entitled "Suborbital flights and the delimitation of airspace vis-à-vis outer space: functionalism, spatialism and State sovereignty" (A/AC.105/C.2/2018/CRP.9).

6. The Subcommittee noted with satisfaction the report on the series of aerospace symposiums organized by ICAO and the Office for Outer Space Affairs from 2015 to 2017 (A/AC.105/1155), which was before the Subcommittee. The Subcommittee noted that the main objectives of the symposiums had been to bring together representatives of the aviation and space communities, including the commercial and private sectors, and to explore existing regulatory mechanisms and operational practices in the fields of aviation and space transportation. The Subcommittee also noted that efforts had been made to make use of the symposiums to facilitate the strengthening of a dialogue between the aviation and space communities, and that the Office for Outer Space Affairs and ICAO would continue their cooperation, including through the Space Learning Group.

7. Some delegations expressed the view that the definition and delimitation of outer space would make it possible to ensure the practical application of the principle of freedom of exploration and use of outer space for peaceful purposes on the basis of non-discrimination and equality between States. In addition, it would help to define precisely whether an object was a space object, in view of technological progress and the development of vehicles for use in space tourism and commercial suborbital flights; it would make it possible to demarcate clearly the sphere of influence of States and private actors, in view of the rapid growth of the commercial space sector; and it would also make it possible to define in clear terms the spatial scope of application of international treaties concerning activities in airspace and outer space, which would prevent future claims by States to outer space or any part thereof.

8. The view was expressed that the definition and delimitation of outer space would be beneficial to States and valuable in safeguarding the proper governance of space activities at the international, regional and national levels. It would also enable the effective application of the fundamental principles of the United Nations treaties on outer space; assist in providing clarity and certainty and reduce inconsistencies in the practice of States pertaining to activities conducted in airspace and outer space,

including suborbital flights for scientific missions or human transportation; and facilitate compliance with and response to matters related to the sovereignty and liability of States.

9. Some delegations expressed the view that the lack of a definition or delimitation of outer space created legal uncertainty at both the national and international levels concerning the applicability of air law and space law.

10. The view was expressed that the issue of definition and delimitation of outer space was closely linked to matters of safety and security.

11. The view was expressed that, in the absence of a clear definition and delimitation of outer space and airspace, it was impossible to define an area of applicable law and to consistently enforce laws, rules and regulations.

12. The view was expressed that the issues relating to the definition and delimitation of outer space should be addressed in order to ensure the safety of aerospace operations without prejudice to national security and State sovereignty.

13. The view was expressed that the rationale for the delimitation of outer space and airspace at the level between 100 and 110 km above sea level would be based on comprehensive aspects, including scientific, technical and physical characteristics, namely the atmospheric layers, aircraft altitude capacity, the perigee of the spacecraft and the Kármán line.

14. The view was expressed that many States, in their existing national frameworks, had developed different mechanisms and approaches to distinguish outer space and airspace activities with a view to fulfilling their obligations under international treaties, and that those mechanisms should serve as an underlying foundation for guidance and rationale in continuing to look for an adequate solution to assist the Subcommittee in attaining a coherent resolution to the problem.

15. The view was expressed that the establishment of the definition and delimitation of outer space in national laws did not warrant it in international space law.

16. The view was expressed that, in order to resolve the problems relating to the definition and delimitation of outer space, a multilateral legal solution should be applied, which should be a result of an open and inclusive consultation mechanism among States to address the key issues, including an international framework for the registration, authorization and licensing of passage rights for commercial space activities during launch into and re-entry from orbit, keeping in mind that such activities raised legal questions relating to national security, State sovereignty, the safety of the local population and the protection of the environment.

17. The view was expressed that the definition and delimitation of outer space should be based on a functional approach, instead of criteria including altitude or the location of an object, because space law would apply to any activity aimed at putting a space object into Earth orbit or beyond in outer space. The delegation expressing that view was also of the view that altitude should not be a factor for determining whether an activity was an outer space activity; rather, the classification of the activity should be determined a priori according to the function of the space object and the purpose of the activity. Therefore, it would be appropriate that the legal framework applied to a suborbital flight be determined not by the flight altitude but by the characteristics of the activity and the legal issues arising from it.

18. The view was expressed that the main problem in the elaboration of the term "outer space" was in the establishment of a certain conditional border, which would define those legal regimes that would be applicable to the areas around it. In that connection, neither of the existing approaches, whether spatial or functional, would be able to resolve, on its own and in full, the regulation of existing and prospective models of flights as related to: (a) the principle of indivisibility and non-appropriation of outer space; and (b) the protection of national interests and sovereignty of States. The delegation expressing that view was also of the view that the question of the delimitation of outer space was linked to the problem of the existence of certain gaps

in international space law, which were related to the preservation of outer space for peaceful purposes, the prevention of an arms race in outer space and the non-use of force. Therefore, in view of a complex geopolitical situation and the absence of effective international agreements and guarantees in that field, the issue of delimitation appeared in the dimension of legal certainty regarding the protection of sovereignty and security of States. As a result, the establishment of any kind of strata between airspace and outer space should be avoided.

19. Some delegations expressed the view that States should continue to operate in the current framework, which functioned well, until such time as there was a demonstrated need and a practical basis for developing a definition or delimitation of outer space. The delegations expressing that view were also of the view that the current framework had presented no practical difficulties and that, therefore, at present, any attempt to define and delimit outer space would be a theoretical exercise that could unintentionally complicate existing activities and might not be adaptable to future technological developments.

20. Some delegations expressed the view that there was no evidence to suggest that the lack of a definition or delimitation of outer space had hindered or restricted the growth of aviation or outer space exploration, and that no specific cases of a practical nature had been reported to the Subcommittee that could confirm that the lack of a definition of airspace or outer space had compromised aviation safety.

21. Some delegations expressed the view that progress in the matters relating to the definition and delimitation of outer space could be achieved though consultations with ICAO.

22. Some delegations expressed the view that the existence of different regimes and mutually exclusive concepts, such as territorial sovereignty and the common heritage of humanity, revealed a substantial basis for the Subcommittee to keep the item on its agenda for future sessions.

23. Some delegations expressed the view that the geostationary orbit — a limited natural resource clearly in danger of saturation — needed to be used rationally and should be made available to all States, irrespective of their current technical capacities. That would provide States with the possibility of gaining access to the geostationary orbit under equitable conditions, bearing in mind, in particular, the needs and interests of developing countries and the geographical position of certain countries, and taking into account the processes of ITU and relevant norms and decisions of the United Nations.

24. Some delegations expressed the view that the geostationary orbit, as a limited natural resource clearly in danger of saturation, must be used rationally, efficiently, economically and equitably. That principle was deemed fundamental for safeguarding the interests of developing countries and countries in certain geographical positions, as set out in article 44, paragraph 196.2, of the ITU Constitution, as amended by the plenipotentiary conference held in 1998.

25. The view was expressed that the legal regime for outer space was different from the legal regime for airspace, which was guided by the principle of sovereignty; the geostationary orbit was therefore an integral part of outer space and was not subject to national appropriation by claim of sovereignty, by means of use or occupation or by any other means, including by means of use or repeated use.

26. The view was expressed that the current regime for the exploitation and utilization of the geostationary orbit provided opportunities mostly for countries with greater financial and technical capabilities and, in that connection, there was a need to take anticipatory measures to address the potential dominance of such countries in the utilization of space in order to address the needs of developing countries and of countries in particular geographical areas, such as those in equatorial regions.

27. Some delegations expressed the view that the utilization by States of the geostationary orbit on a "first come, first served" basis was unacceptable and that the

Subcommittee should therefore develop a legal regime guaranteeing equitable access to orbital positions for States in accordance with the principles of the peaceful use and non-appropriation of outer space.

28. The view was expressed that the problems relating to the utilization of the geostationary orbit included limited frequencies and the amount of coordination needed with the affected satellite networks, especially in adjacent positions, which made it difficult for newcomers to gain access to that orbit spectrum resource. The delegation expressing that view was also of the view that those problems revealed inequalities, inefficiencies and bureaucratic congestion in the utilization of the geostationary orbit, which had become a disadvantage in terms of securing access for all countries, including developing countries, countries in particular geographical areas, equatorial countries and emerging space actors.

29. The view was expressed that the planned band (AP30/30A/30B) regime developed by ITU, which would guarantee equitable access for States to orbital positions, had certain technological limitations that made it difficult to realize, and that the current utilization of that natural resource in unplanned band on a "first-come, first-served" basis had made that natural resource unattainable for countries that did not have the technology.

30. The view was expressed that there was a need for a comprehensive legal principle on the elaboration of a sui generis regime governing the utilization of the geostationary orbit, which would be aimed at achieving the following objectives: (a) ensuring equitable access for all countries, in particular developing countries, countries in particular geographical areas and emerging space actors; (b) ensuring fair and orderly utilization; (c) guaranteeing sustainable utilization; (d) protecting the rights of legitimate users; (e) ensuring rational and efficient use; (f) improving regulations on procedures of access; (g) preventing the abuse of registration procedures and acquired rights; and (h) preventing harmful interference among users.

31. Some delegations expressed the view that, in order to ensure the sustainability of the geostationary orbit and to assure guaranteed and equitable access to it according to the needs of all nations, particularly emerging spacefaring countries, it was necessary to keep the issue on the agenda of the Subcommittee and to explore it further through the creation of appropriate working groups and legal and technical intergovernmental panels, as necessary.

XII. General exchange of views on the application of international law to small satellite activities

32. Pursuant to General Assembly resolution 72/77, the Subcommittee considered agenda item 14, entitled "General exchange of views on the application of international law to small satellite activities", as a single issue/item for discussion on its agenda.

33. The representatives of Austria, France, Germany, Indonesia, Iran (Islamic Republic of), Japan, Mexico, Pakistan, the Republic of Korea, South Africa, the United Arab Emirates, the United Kingdom and the United States made statements under agenda item 14. The representative of Ecuador also made a statement on behalf of the Group of 77 and China. During the general exchange of views, statements relating to the item were made by representatives of other member States.

34. The Subcommittee agreed that the continuation of its work under the item would provide valuable opportunities for addressing a number of topical issues relating to international and national policy and regulation measures regarding the use of small satellites by various actors.

35. The Subcommittee took note with appreciation of the questionnaire on the application of international law to small-satellite activities (contained

in A/AC.105/1122, annex I, appendix II), considered by the Working Group on the Status and Application of the Five United Nations Treaties of Outer Space. The Subcommittee noted that both the questionnaire and the replies received from member States and observers, which were contained in two conference room papers (A/AC.105/C.2/2018/CRP.10 and A/AC.105/C.2/2018/CRP.17), enhanced the discussion of the legal issues raised with regard to small-satellite activities at the international level.

36. The Subcommittee reaffirmed that small satellites had become important instruments that enabled many developing States, their governmental and non-governmental organizations, including universities, education and research institutes, and private industries with limited funds, to join in the exploration and the peaceful uses of outer space and to become developers of space technology.

37. The Subcommittee recognized that technological progress had made the development, launch and operation of small satellites increasingly affordable and that such satellites could provide substantial assistance in various areas, including education, telecommunications, Earth observation and disaster mitigation. Such satellites could also be used to test and demonstrate new technologies, thus playing an important role in fostering technological progress in the area of space activities.

38. The Subcommittee noted with appreciation the programmes of the Office for Outer Space Affairs, including the Basic Space Technology Initiative — which promoted capacity-building in space technology development and international and national space law related to small-satellite activities — and the United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station Japanese Experiment Module (Kibo), known as "KiboCUBE", which provided opportunities to educational and research institutions in developing countries that were States members of the Committee.

39. The Subcommittee reiterated that the guidance on space object registration and frequency management for small and very small satellites, which had been jointly developed by the Office for Outer Space Affairs and ITU, served as a useful guide for developers and operators of small satellites.

40. The Subcommittee was informed about existing and emerging practices and regulatory frameworks applicable to the development and use of small satellites, and about the programmes of States and international organizations in that field.

41. The Subcommittee noted that the activities of small satellites, regardless of their size, should be carried out in compliance with existing international regulatory frameworks, including the United Nations treaties and principles on outer space, the ITU Constitution and Convention and the ITU Radio Regulations, and certain non-binding instruments, including the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, in order to guarantee the safety and sustainability of outer space activities.

42. Some delegations expressed the view that the evolving nature of space technologies and the growing number of space actors required clarity in the application of existing space law and administration procedures, in order to address the opportunities and challenges of small-satellite activities.

43. The view was expressed that the relevant international standards needed to be adjusted and that, to that end, the revised "Inter-Agency Space Debris Coordination Committee statement on large constellations of satellites in low earth orbit" of the Inter-Agency Space Debris Coordination Committee was welcome.

44. The view was expressed that the discussions on the application of international law to small- satellite activities should also focus on the definition of "small satellite".

45. Some delegations expressed the view that the elaboration of provisions for small satellites, including the possibility of an ad hoc legal regime, could be considered. Such provisions could address the operations of small satellites, including the

consideration of ways and means of ensuring the rational and equitable use of the low Earth orbit and frequency spectrum.

46. Some delegations expressed the view that the existing legal regime on outer space provided safety, transparency and sustainability of operations involving small-satellite activities and that an ad hoc legal regime or any other mechanisms that could impose limitations on the design, building, launch or use of space objects should not be created.

47. The view was expressed that there were potential risks of physical accidents and frequency interference owing to the increasing concentration of small satellites.